



WO 00/08220

RECEIVED

PCT/RU99/00254

AUG 13 2002

## Claims.

TECHNOLOGY CENTER 1700

- 5 1. A method of applying a metal coating on the surface of materials (limited by powders and substrates) which comprises degreasing, cleaning and drying of the surface and mechanical smearing of the particles of a compound chosen from the group of metals, alloys, metal oxides, metal hydroxides, metal sulfides (metals are limited by copper, nickel, aluminum, zinc, titanium, tungsten, germanium, gold, cobalt, molybdenum, tin, palladium, platinum) on the surface of the material with formation of a thin film coating and with a subsequent heating in non-oxidizing atmosphere.

10 2. A method as claimed in claim 1, wherein said mechanical smearing of said particles on powders is carried out by mixing in mills and mixers.

15 3. A method as claimed in claim 1, wherein said mechanical smearing of said particles on flat surfaces is carried out with the help of spreading said particles on the surface by rolling or by pouring a suspension with a high content of the solid phase with a subsequent drying and rolling.

20 4. A method as claimed in claim 1, wherein said mechanical smearing of said particles on the surface of a substrate having a complex shape is carried out by pulverization of a suspension or of a powder.

5. A method as claimed in claim 1, wherein copper monoxide or dioxide or nickel monoxide are used as said compounds which form the metal coating, and heating is performed in non-oxidizing atmosphere at temperatures 200-500 °C.

25 6. A method as claimed in claim 1, wherein said mechanical smearing of said metals and alloys is performed, and heating is performed in non-oxidizing atmosphere at temperatures 200-300 °C.

7. A method as claimed in claim 1, wherein one or several secondary layers of metal are applied to the surface of the primary metal layer and/or metal layer is protected from oxidation by treatment in organic solvents after cooling of the coated material.

30 8. A method as claimed in claim 1, wherein metal layer obtained is heated in an oxidizing atmosphere with the aim to obtain metal oxide layer.

9. A method as claimed in claim 1, wherein the material to be coated is an abrasive powder.

10. A method as claimed in claim 9, wherein abrasive particles coated with a metal coating are sintered with metal by the technique of hot pressing in an inert atmosphere



10

WO 00/08220

PCT/RU99/00254

in order to obtain a compact for manufacturing of an abrasive instrument.

5

10

15

20

25

30

RECEIVED  
AUG 13 2002  
TECHNOLOGY CENTER 1700